

3040

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/S22,096
Source: PCT
Date Processed by STIC: 2-2-05

ENTERED



PCT

RAW SEQUENCE LISTING

DATE: 02/02/2005

PATENT APPLICATION: US/10/522,096

TIME: 15:35:07

Input Set : A:\Sequence listing.txt

Output Set: N:\CRF4\02022005\J522096.raw

```

3 <110> APPLICANT: Ehrhardt, Thomas
4     Sonnewald, Uwe
5     Bornke, Frederik
6     Chen, Shuai
8 <120> TITLE OF INVENTION: Sucrose-6-Phosphate Phosphatase as Target for Herbicides
10 <130> FILE REFERENCE: 532622010200
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/522,096
13 <141> CURRENT FILING DATE: 2005-01-24
15 <160> NUMBER OF SEQ ID NOS: 19
17 <170> SOFTWARE: PatentIn version 3.1
19 <210> SEQ ID NO: 1
20 <211> LENGTH: 1278
21 <212> TYPE: DNA
22 <213> ORGANISM: Nicotiana tabacum
24 <220> FEATURE:
25 <221> NAME/KEY: CDS
26 <222> LOCATION: (1)..(1275)
27 <223> OTHER INFORMATION:
W--> 30 <400> 1
31 atg gat cag cta acc agt gcc gca cgt ctc atg ata gtc tca gat cta      48
32 Met Asp Gln Leu Thr Ser Ala Ala Arg Leu Met Ile Val Ser Asp Leu
33 1          5          10          15
35 gac cat aca atg gta gat cat cat gat gcc gag aac ctt tct ctg ctt      96
36 Asp His Thr Met Val Asp His His Asp Ala Glu Asn Leu Ser Leu Leu
37          20          25          30
39 aga ttt aat gct tta tgg gag gcg aat tat cgt gat aac tct ttg tta      144
40 Arg Phe Asn Ala Leu Trp Glu Ala Asn Tyr Arg Asp Asn Ser Leu Leu
41          35          40          45
43 gtg ttc tca act ggg aga tca cct aca ctt tac aag gag ttg agg aaa      192
44 Val Phe Ser Thr Gly Arg Ser Pro Thr Leu Tyr Lys Glu Leu Arg Lys
45          50          55          60
47 gaa aag ccc atg cta acc cca gat att act att atg tcg gtg gga act      240
48 Glu Lys Pro Met Leu Thr Pro Asp Ile Thr Ile Met Ser Val Gly Thr
49 65          70          75          80
51 gaa ata aca tat ggt aac tct gtg gtg cct gat gat ggt tgg gaa gct      288
52 Glu Ile Thr Tyr Gly Asn Ser Val Val Pro Asp Asp Gly Trp Glu Ala
53          85          90          95
55 ttt cta aat aac aag tgg gac aga aag ata gta aca gag gag act agc      336
56 Phe Leu Asn Asn Lys Trp Asp Arg Lys Ile Val Thr Glu Glu Thr Ser
57          100          105          110
59 aag ttt cct gaa ctc act cta cag tca gaa acg gag cag cga cca cac      384
60 Lys Phe Pro Glu Leu Thr Leu Gln Ser Glu Thr Glu Gln Arg Pro His
61          115          120          125

```

RAW SEQUENCE LISTING

DATE: 02/02/2005

PATENT APPLICATION: US/10/522,096

TIME: 15:35:07

Input Set : A:\Sequence listing.txt

Output Set: N:\CRF4\02022005\J522096.raw

63	aag gtc agt ttc tat gtt cag aaa gac aaa gca caa gat ata atg aaa	432
64	Lys Val Ser Phe Tyr Val Gln Lys Asp Lys Ala Gln Asp Ile Met Lys	
65	130 135 140	
67	act ctt tcc aag cgc ttc gaa gaa cgt ggg ctg gat gtc aaa ata att	480
68	Thr Leu Ser Lys Arg Phe Glu Glu Arg Gly Leu Asp Val Lys Ile Ile	
69	145 150 155 160	
71	tac agt gga ggc atg gat cta gat ata tta cca caa ggt gct ggc aaa	528
72	Tyr Ser Gly Gly Met Asp Leu Asp Ile Leu Pro Gln Gly Ala Gly Lys	
73	165 170 175	
75	gga caa gca ctt gca tat ttg ctt aag aaa ttg aag agt gag gga aaa	576
76	Gly Gln Ala Leu Ala Tyr Leu Leu Lys Lys Leu Lys Ser Glu Gly Lys	
77	180 185 190	
79	tta cca aac aac acc ctt gcc tgt ggt gac tct ggg aat gat gct gag	624
80	Leu Pro Asn Asn Thr Leu Ala Cys Gly Asp Ser Gly Asn Asp Ala Glu	
81	195 200 205	
83	cta ttc agt atc cca gat gtg tat ggt gta atg gta gct aat gca cag	672
84	Leu Phe Ser Ile Pro Asp Val Tyr Gly Val Met Val Ala Asn Ala Gln	
85	210 215 220	
87	gag gaa tta ttg caa tgg cat gct gca aat gcg aag aat aat cct aaa	720
88	Glu Glu Leu Leu Gln Trp His Ala Ala Asn Ala Lys Asn Asn Pro Lys	
89	225 230 235 240	
91	gta att cat gca aca gag agg tgt gct gcc ggt atc ata caa gct att	768
92	Val Ile His Ala Thr Glu Arg Cys Ala Ala Gly Ile Ile Gln Ala Ile	
93	245 250 255	
95	ggt cat tcc aac cta ggt cca agt acc tcc cct aga gat gtt atg gat	816
96	Gly His Ser Asn Leu Gly Pro Ser Thr Ser Pro Arg Asp Val Met Asp	
97	260 265 270	
99	ttg tca gac tgc aag atg gag aac ttt gtt ccc gcc tat gaa gtt gtc	864
100	Leu Ser Asp Cys Lys Met Glu Asn Phe Val Pro Ala Tyr Glu Val Val	
101	275 280 285	
103	aaa ttt tac cta ttt ttt gag aaa tgg agg cgt gga gaa att gag cat	912
104	Lys Phe Tyr Leu Phe Phe Glu Lys Trp Arg Arg Gly Glu Ile Glu His	
105	290 295 300	
107	tct gag cat tac ctg tca aac ctt aaa gca gtg tgt aga cca tct ggt	960
108	Ser Glu His Tyr Leu Ser Asn Leu Lys Ala Val Cys Arg Pro Ser Gly	
109	305 310 315 320	
111	act ttt gtc cac cca tct ggt gtt gag aaa tcc ctc cag gaa tgt gta	1008
112	Thr Phe Val His Pro Ser Gly Val Glu Lys Ser Leu Gln Glu Cys Val	
113	325 330 335	
115	act tta ttc ggg aca tgt cat ggt gac aaa cag ggg aaa caa ttt cgt	1056
116	Thr Leu Phe Gly Thr Cys His Gly Asp Lys Gln Gly Lys Gln Phe Arg	
117	340 345 350	
119	att tgg gtc gat caa gtt tta cct gta cag gtt ggt tcg gac tca tgg	1104
120	Ile Trp Val Asp Gln Val Leu Pro Val Gln Val Gly Ser Asp Ser Trp	
121	355 360 365	
123	tta gtg agt ttc aag aaa tgg gag ctc tct ggt gaa gac agg cga tgt	1152
124	Leu Val Ser Phe Lys Lys Trp Glu Leu Ser Gly Glu Asp Arg Arg Cys	
125	370 375 380	
127	tgc ata act aca gtc cta tta agt tca aag aat aag act gtc gca gat	1200

RAW SEQUENCE LISTING

DATE: 02/02/2005

PATENT APPLICATION: US/10/522,096

TIME: 15:35:07

Input Set : A:\Sequence listing.txt

Output Set: N:\CRF4\02022005\J522096.raw

```

128 Cys Ile Thr Thr Val Leu Leu Ser Ser Lys Asn Lys Thr Val Ala Asp
129 385          390          395          400
131 gga ctc act tgg acc cac gta cat cag aca tgg ctg aat gga gct gca      1248
132 Gly Leu Thr Trp Thr His Val His Gln Thr Trp Leu Asn Gly Ala Ala
133          405          410          415
135 gca agt gac tcc gcg tcc tgg ttc ttt tag      1278
136 Ala Ser Asp Ser Ala Ser Trp Phe Phe
137          420          425
140 <210> SEQ ID NO: 2
141 <211> LENGTH: 425
142 <212> TYPE: PRT
143 <213> ORGANISM: Nicotiana tabacum
145 <400> SEQUENCE: 2
147 Met Asp Gln Leu Thr Ser Ala Ala Arg Leu Met Ile Val Ser Asp Leu
148 1          5          10          15
151 Asp His Thr Met Val Asp His His Asp Ala Glu Asn Leu Ser Leu Leu
152          20          25          30
155 Arg Phe Asn Ala Leu Trp Glu Ala Asn Tyr Arg Asp Asn Ser Leu Leu
156          35          40          45
159 Val Phe Ser Thr Gly Arg Ser Pro Thr Leu Tyr Lys Glu Leu Arg Lys
160          50          55          60
163 Glu Lys Pro Met Leu Thr Pro Asp Ile Thr Ile Met Ser Val Gly Thr
164 65          70          75          80
167 Glu Ile Thr Tyr Gly Asn Ser Val Val Pro Asp Asp Gly Trp Glu Ala
168          85          90          95
171 Phe Leu Asn Asn Lys Trp Asp Arg Lys Ile Val Thr Glu Glu Thr Ser
172          100          105          110
175 Lys Phe Pro Glu Leu Thr Leu Gln Ser Glu Thr Glu Gln Arg Pro His
176          115          120          125
179 Lys Val Ser Phe Tyr Val Gln Lys Asp Lys Ala Gln Asp Ile Met Lys
180          130          135          140
183 Thr Leu Ser Lys Arg Phe Glu Glu Arg Gly Leu Asp Val Lys Ile Ile
184 145          150          155          160
187 Tyr Ser Gly Gly Met Asp Leu Asp Ile Leu Pro Gln Gly Ala Gly Lys
188          165          170          175
191 Gly Gln Ala Leu Ala Tyr Leu Leu Lys Lys Leu Lys Ser Glu Gly Lys
192          180          185          190
195 Leu Pro Asn Asn Thr Leu Ala Cys Gly Asp Ser Gly Asn Asp Ala Glu
196          195          200          205
199 Leu Phe Ser Ile Pro Asp Val Tyr Gly Val Met Val Ala Asn Ala Gln
200          210          215          220
203 Glu Glu Leu Leu Gln Trp His Ala Ala Asn Ala Lys Asn Asn Pro Lys
204 225          230          235          240
207 Val Ile His Ala Thr Glu Arg Cys Ala Ala Gly Ile Ile Gln Ala Ile
208          245          250          255
211 Gly His Ser Asn Leu Gly Pro Ser Thr Ser Pro Arg Asp Val Met Asp
212          260          265          270
215 Leu Ser Asp Cys Lys Met Glu Asn Phe Val Pro Ala Tyr Glu Val Val
216          275          280          285

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/522,096

DATE: 02/02/2005

TIME: 15:35:07

Input Set : A:\Sequence listing.txt

Output Set: N:\CRF4\02022005\J522096.raw

219 Lys Phe Tyr Leu Phe Phe Glu Lys Trp Arg Arg Gly Glu Ile Glu His
 220 290 295 300
 223 Ser Glu His Tyr Leu Ser Asn Leu Lys Ala Val Cys Arg Pro Ser Gly
 224 305 310 315 320
 227 Thr Phe Val His Pro Ser Gly Val Glu Lys Ser Leu Gln Glu Cys Val
 228 325 330 335
 231 Thr Leu Phe Gly Thr Cys His Gly Asp Lys Gln Gly Lys Gln Phe Arg
 232 340 345 350
 235 Ile Trp Val Asp Gln Val Leu Pro Val Gln Val Gly Ser Asp Ser Trp
 236 355 360 365
 239 Leu Val Ser Phe Lys Lys Trp Glu Leu Ser Gly Glu Asp Arg Arg Cys
 240 370 375 380
 243 Cys Ile Thr Thr Val Leu Ser Ser Lys Asn Lys Thr Val Ala Asp
 244 385 390 395 400
 247 Gly Leu Thr Trp Thr His Val His Gln Thr Trp Leu Asn Gly Ala Ala
 248 405 410 415
 251 Ala Ser Asp Ser Ala Ser Trp Phe Phe
 252 420 425

255 <210> SEQ ID NO: 3

256 <211> LENGTH: 1278

257 <212> TYPE: DNA

258 <213> ORGANISM: Nicotiana tabacum

260 <220> FEATURE:

261 <221> NAME/KEY: CDS

262 <222> LOCATION: (1)..(1275)

263 <223> OTHER INFORMATION:

W--> 266 <400> 3

267 atg gat cag cta acc agt gcc gca cgt ctc atg ata gtc tca gat ctt 48
 268 Met Asp Gln Leu Thr Ser Ala Ala Arg Leu Met Ile Val Ser Asp Leu
 269 1 5 10 15
 271 gac cat acc atg gtt gat cat cat gat cct gag aac ctt tct ctg ctt 96
 272 Asp His Thr Met Val Asp His His Asp Pro Glu Asn Leu Ser Leu Leu
 273 20 25 30
 275 agg ttt aat gct tta tgg gag gcc aat tat cgt gaa aac tcc ttg tta 144
 276 Arg Phe Asn Ala Leu Trp Glu Ala Asn Tyr Arg Glu Asn Ser Leu Leu
 277 35 40 45
 279 gtg ttc tca act ggg aga tca cct acc ctt tac aag gag ttg aga aaa 192
 280 Val Phe Ser Thr Gly Arg Ser Pro Thr Leu Tyr Lys Glu Leu Arg Lys
 281 50 55 60
 283 gag aag ccc atg cta acc cca gat att acc att atg tct gtg ggg act 240
 284 Glu Lys Pro Met Leu Thr Pro Asp Ile Thr Ile Met Ser Val Gly Thr
 285 65 70 75 80
 287 gaa ata act tat ggt aac tct atg gag cca gat gat ggt tgg gaa gca 288
 288 Glu Ile Thr Tyr Gly Asn Ser Met Glu Pro Asp Asp Gly Trp Glu Ala
 289 85 90 95
 291 ttt tta aat gat aag tgg gat cgg aaa ata gtg aca gag gag aca agc 336
 292 Phe Leu Asn Asp Lys Trp Asp Arg Lys Ile Val Thr Glu Glu Thr Ser
 293 100 105 110
 295 aaa ttt cct gaa ctc acc ctt cag tca gaa aca gag cag cga cca cac 384

RAW SEQUENCE LISTING

DATE: 02/02/2005

PATENT APPLICATION: US/10/522,096

TIME: 15:35:07

Input Set : A:\Sequence listing.txt

Output Set: N:\CRF4\02022005\J522096.raw

296	Lys	Phe	Pro	Glu	Leu	Thr	Leu	Gln	Ser	Glu	Thr	Glu	Gln	Arg	Pro	His	
297			115					120					125				
299	aag	gtc	agt	ttc	tat	gtt	cag	aaa	gac	aag	gct	caa	gat	ata	acg	gga	432
300	Lys	Val	Ser	Phe	Tyr	Val	Gln	Lys	Asp	Lys	Ala	Gln	Asp	Ile	Thr	Gly	
301		130					135					140					
303	act	ctt	tcc	aag	cgc	ttg	gaa	gaa	cgt	ggg	ttg	gat	gtc	aaa	ata	att	480
304	Thr	Leu	Ser	Lys	Arg	Leu	Glu	Glu	Arg	Gly	Leu	Asp	Val	Lys	Ile	Ile	
305	145					150					155					160	
307	tat	agc	gga	ggg	atg	gat	ttg	gac	att	ttg	cca	caa	ggg	gct	ggc	aaa	528
308	Tyr	Ser	Gly	Gly	Met	Asp	Leu	Asp	Ile	Leu	Pro	Gln	Gly	Ala	Gly	Lys	
309				165					170						175		
311	gga	cga	gca	ctt	gca	tat	ttg	ctt	aag	aaa	tta	aag	agt	gag	ggc	aag	576
312	Gly	Arg	Ala	Leu	Ala	Tyr	Leu	Leu	Lys	Lys	Leu	Lys	Ser	Glu	Gly	Lys	
313			180						185					190			
315	tta	cca	aac	aac	acg	ctt	gcc	tgt	ggg	gac	tct	gga	aat	gat	gct	gag	624
316	Leu	Pro	Asn	Asn	Thr	Leu	Ala	Cys	Gly	Asp	Ser	Gly	Asn	Asp	Ala	Glu	
317			195				200						205				
319	ctt	ttc	agt	atc	cca	gat	gtt	tat	ggg	gtg	atg	gta	gcg	aat	gca	cag	672
320	Leu	Phe	Ser	Ile	Pro	Asp	Val	Tyr	Gly	Val	Met	Val	Ala	Asn	Ala	Gln	
321		210					215					220					
323	gag	gag	tta	tta	caa	tgg	cgt	gct	gca	aat	gca	aaa	gat	agt	cca	aaa	720
324	Glu	Glu	Leu	Leu	Gln	Trp	Arg	Ala	Ala	Asn	Ala	Lys	Asp	Ser	Pro	Lys	
325	225				230					235						240	
327	gta	att	cat	gca	aca	gag	aga	tgt	gcc	gcg	ggg	ata	ata	caa	gca	att	768
328	Val	Ile	His	Ala	Thr	Glu	Arg	Cys	Ala	Ala	Gly	Ile	Ile	Gln	Ala	Ile	
329				245					250						255		
331	ggg	cat	ttc	aac	ctg	gga	cca	aat	acc	tct	cct	aga	gat	gtt	aca	gat	816
332	Gly	His	Phe	Asn	Leu	Gly	Pro	Asn	Thr	Ser	Pro	Arg	Asp	Val	Thr	Asp	
333			260						265					270			
335	atg	tca	gac	tgc	aag	atg	gag	aat	ttt	gtt	cct	gct	tat	gaa	gtc	gtc	864
336	Met	Ser	Asp	Cys	Lys	Met	Glu	Asn	Phe	Val	Pro	Ala	Tyr	Glu	Val	Val	
337			275				280							285			
339	aaa	ttt	tac	ttg	ttt	ttc	gag	aaa	tgg	agg	cgt	gga	gaa	att	gag	aat	912
340	Lys	Phe	Tyr	Leu	Phe	Phe	Glu	Lys	Trp	Arg	Arg	Gly	Glu	Ile	Glu	Asn	
341		290				295						300					
343	tct	gac	ctt	cac	ttg	tca	aac	ctg	aaa	gca	gtt	tgt	aga	cca	tcc	ggg	960
344	Ser	Asp	Leu	His	Leu	Ser	Asn	Leu	Lys	Ala	Val	Cys	Arg	Pro	Ser	Gly	
345	305				310					315					320		
347	act	ttt	gtg	cac	cca	tct	gga	gtt	gag	aaa	tat	ctt	gag	gac	tgc	ata	1008
348	Thr	Phe	Val	His	Pro	Ser	Gly	Val	Glu	Lys	Tyr	Leu	Glu	Asp	Cys	Ile	
349				325					330						335		
351	aat	aca	ttg	aga	act	tgt	cac	ggg	gac	aaa	cag	ggg	aaa	caa	ttt	cgt	1056
352	Asn	Thr	Leu	Arg	Thr	Cys	His	Gly	Asp	Lys	Gln	Gly	Lys	Gln	Phe	Arg	
353			340						345					350			
355	att	tgg	gtt	gat	cta	gtg	tta	cct	aca	cag	gtt	ggg	tca	gat	tca	tgg	1104
356	Ile	Trp	Val	Asp	Leu	Val	Leu	Pro	Thr	Gln	Val	Gly	Ser	Asp	Ser	Trp	
357			355				360							365			
359	tta	gtg	agt	ttc	aag	aaa	tgg	gag	ctt	tgt	ggc	gaa	gag	cga	caa	tgt	1152
360	Leu	Val	Ser	Phe	Lys	Lys	Trp	Glu	Leu	Cys	Gly	Glu	Glu	Arg	Gln	Cys	

VERIFICATION SUMMARY

DATE: 02/02/2005

PATENT APPLICATION: US/10/522,096

TIME: 15:35:08

Input Set : A:\Sequence listing.txt

Output Set: N:\CRF4\02022005\J522096.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application Number
L:30 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:27
L:266 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:263
L:502 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:499